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Quarterly Progress Report  
Number 5

August 15, 1965

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Project Number: 723  
Title: PI Performance  
Contract Dates: 6/19/64 - 6/19/66  
Estimated Costs:   
Funds Expended to 7/31/65:   
Costs Remaining:   
Technical Representative: JH  
Project Director: DNB  
Project Staff: DNE, AH, RRM, DD

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Declass Review by NGA.

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This progress report covers the period from May 15, 1965 to August 15, 1965.

Expenditures

The average expenditure rate thus far has been about  per month; this is slightly less than the estimated rate of  per month. During the three-month period from April 30, 1965 to July 30, 1965, the average monthly expenditure rate was

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Progress

A psychophysical study was conducted in the previous reporting period. The purpose of the study was to determine, at several angles of obliquity, the relation between the size of the camera convergence angle and the judgment of relative depth. During the present reporting period the data were analyzed and a written report of the study was sent to RLS.

The results of the study showed that at 0° obliquity there was a linear relation between the size of the convergence angle and the amount of depth seen. At 30° and 60° obliquity the relation was curvilinear, the curvilinearity being less at 30° than at 60° obliquity. In other words, equal differences in the size of the convergence angle did not produce equal differences in the amount of depth seen.

A rather unexpected finding was that of the ten photointerpreters who participated in the study two were apparently unable to see differences in depth. In addition, the same two photointerpreters judged non-stereo pairs as having more depth than a few of the stereo pairs. This result was particularly surprising because the two halves of the non-stereo pairs did not have the same sun azimuth.

DNE, AH, FS, Jim C., and CM met in CM's shop to discuss the mensuration study. At that time, the types of images to be prepared, the image layout, and the number of subjects to be used were decided upon. At a later date, FS, RLS, JC, and CM met and decided to modify the images and the image layout.

FS prepared two degraded images and two sharp images for the purpose of making some preliminary measurements using the Mann 621 comparator. AH, FS, and EC visited CM's shop and made the preliminary measurements with the help of one of CM's people. No major difficulties were encountered. The results of the preliminary work were discussed with CM and JC. It was decided that FS and EC would begin producing the required images.

AH and DNE have prepared a preliminary design for the mensuration study. It is anticipated that six individuals from CM's shop will participate in the study and about 28,000 measurements will be made.

Also during the past quarter, high resolution photographs were obtained of selected sites in the U. S. Several frames were selected for the forthcoming PI performance study.